

## New Species in *Adiantum* from Brazil

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**ABSTRACT.**—A new species of *Adiantum*, *A. pulcherrimum* Prado, is described from the Atlantic forests of Rio de Janeiro and São Paulo States, and inland forest from Minas Gerais State, Brazil. It can be distinguished by long-creeping rhizomes, stipes with scattered minute and light brown hairs, laminae glaucous abaxially, median segments curved basiscopically, segment apices mostly long-acuminate or acute, and glabrous indusia. Illustrations of the diagnostic characters of the taxon as well as a key for the related species in Brazil are also presented.

The genus *Adiantum* in Brazil is represented by ca 59 species, including one described here. Most species occur in primary and secondary forests in the southeastern region of the country, from sea level to 2000 m. In this area ca 62%, 34 spp., of the species known for Brazil have been found.

Several recent studies have dealt with Brazilian *Adiantum*: Zimmer & Prado (1997); Prado (1997); Prado & Palacios-Rios (1998); Prado (2000); Lellinger & Prado (2001); Prado (2001); Prado & Lellinger (2002). This paper is an additional contribution toward a revision of *Adiantum* in Brazil and treats a new species from the Atlantic forests of Rio de Janeiro and São Paulo States, and the inland forest of Minas Gerais State.

### ***Adiantum pulcherrimum* Prado, sp. nov., Fig. 1.**

A *A. abscisso* Schrad., cui affinis, stipitis cum pilis sparsis et pallidis castaneis, segmentis medianis abaxialiter glaucis in apice principaliter longiacuminatis vel acutis, indusiis glabris differt.—Type. Brazil: Rio de Janeiro, Mun. de Mangaratiba, Reserva Rio das Pedras (RPPN-IBAMA), trilha do Cambucá, 16 Aug. 2001, C. Mynssen et al. 356 (holotype: RUSU!; isotypes: MBM!, NY!, RB!, SP!, UC!).

Plants terrestrial. Rhizomes long-creeping, 3–4 mm in diam., scaly, the scales somewhat shiny, essentially concolorous, appressed, varying from light to dark brown, lanceate, sparsely denticulate at margins. Fronds monomorphic, 30–80 cm long; laminae 20–50 cm wide, deltate-pentagonal to ovate, 4- to 5-pinnate at base, 2-pinnate distally; stipes 5–8 mm apart, 1/2–2/3 the length of fronds, dark brown to black, adaxially sulcate, hairy, the hairs scattered, appressed throughout or patent, light brown, minute 0.1–0.2 mm long; rachises similar to the stipes in color and indument; pinnae alternate, stalked, oblong-lanceate, slightly decreasing in width at the base and apex, 10–20 × 4–7, the terminal pinna conform, indument of costae like that of stipes;



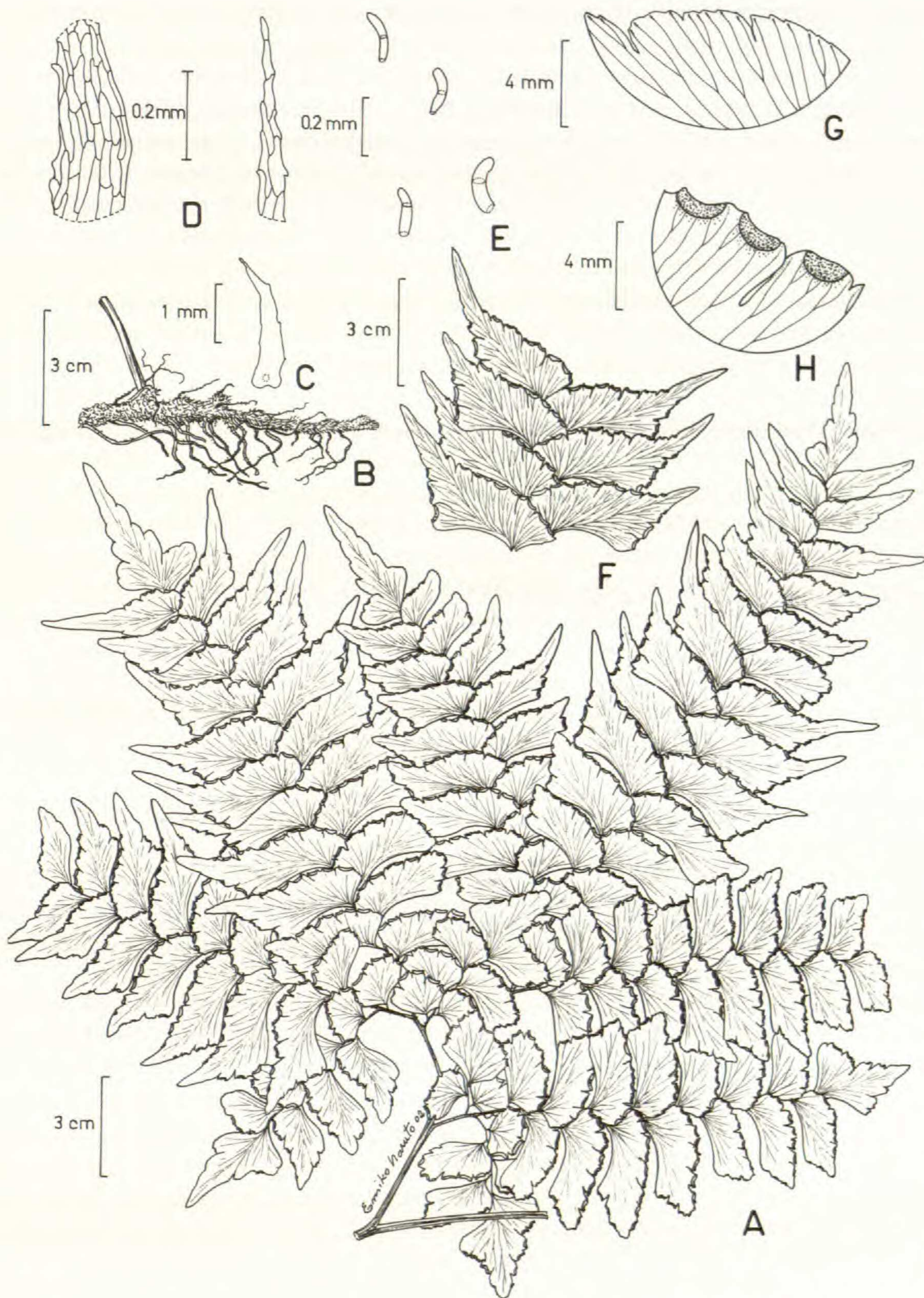


FIG. 1. *Adiantum pulcherrimum*. A. Part of a frond. B. Rhizome. C. Rhizome scale. D. Detail of rhizome scales. E. Rachis hairs. F. Veins on abaxial surface of fertile segments. G. Detail of a sterile segment margin. H. Detail of indusia. A, B, F, and H based on Mynssen *et al.* 97 (RUSU); C, D, E, and G based on Mynssen *et al.* 356 (SP).



median segments mostly dimidiate, lacking costa, glabrous on both surfaces and glaucous abaxially, trapeziform, 1.5–5 cm long, not articulate to stalks (color of stalks passing into segment bases), the stalks slender, 1–4 mm long, the segment margins curved basiscopically, the outer two sides variously biserrate, crenate or shallowly to somewhat deeply lobed, chartaceous, bases of the segments overlapping the rachis, apices mostly long-acuminate or acute, the proximal pairs of segments reduced, somewhat rounded or triangular, the terminal segment wide and rhombic; veins free, flabellately several-times forked, the veins ending in marginal teeth on the sterile segments; sori varying from ellipsoid to curved-oblong, 1–3 mm long, solitary on lobules of the distal and acroscopic margins, up to about 12 per pinnule, indusia dark brown, glabrous, with entire margins; spores tan, surface verrucate.

MATERIAL EXAMINED.—BRAZIL. **Minas Gerais**, Viçosa, Faz. Aguada, alt. 725 m, 16 Sept. 1930, Y. Mexia 5055a (UC). **Rio de Janeiro**, Mun. Mangaratiba: Reserva Ecológica Rio das Pedras, trilha do Cambucá, 14 Sept. 1996, J. M. A. Braga et al. 3492 (RUSU); Idem, c. 190 m, 6 May 1997, C. Mynssen et al. 97 (RUSU); Idem, 26 Aug. 1998, M. V. Dória et al. 01 (RUSU); Idem, 13 Aug. 1999, C. Mynssen et al. 292 (RUSU). **São Paulo**, Iguape, Pocinhos, Aug. 1927, A. C. Brade 8501 (UC 2 sheets); Idem, id., Morro das Pedras, Aug. 1927, A. C. Brade 8503 (UC), 8504 (NY, UC).

DISTRIBUTION.—Endemic to the Atlantic forests of Rio de Janeiro and São Paulo States, and inland forests from Minas Gerais State.

HABITAT.—Growing in secondary forests, at low elevations (0–725 m), forming large populations.

*Adiantum pulcherrimum* can be recognized by its long-creeping rhizomes, stipes with scattered minute and light brown hairs, glaucous laminae abaxially, median segments curved basiscopically, apices mostly long-acuminate or acute, and glabrous indusia.

*Adiantum pulcherrimum* belongs to the *Adiantum trapeziforme* group, which is characterized by pedate laminae 4- to 5-pinnate at base, becoming 2-pinnate distally, ultimate segments trapeziform to asymmetrical, rounded to obtuse or acute to acuminate at tips, glabrous or pubescent axes, dark brown to blackish, and mostly oblong sori confined to the distal and acroscopic margins of the segments. The following species of this group are found in Brazil: *Adiantum abscissum* Schrad., *A. curvatum* Sw., *A. mathewsianum* Hook., *A. ornithopodum* C. Presl ex Kuhn, *A. patens* Willd., *A. pentadactylon* Langsd. & Fisch., *A. pulcherrimum* Prado, and *A. trapeziforme* L. (cultivated).

*Adiantum abscissum* is the most closely related species to *A. pulcherrimum* but it differs in having stipes with scales and hairs, rachises densely puberulent adaxially, and more numerous, smaller segments with apices rounded or obtuse. It is more widely distributed in Brazil, occurring in the states of Ceará, Pernambuco, Alagoas, Bahia, Mato Grosso, Goiás, Minas Gerais, Espírito Santo, Rio de Janeiro, São Paulo, Paraná, and Santa Catarina.



*Adiantum cultratum* J. Sm. in Hook. is probably another closely related species, but its identity and typification are uncertain. This species was described by John Smith in Hooker (1851: 34) and two specimens were cited: Hab. St. Vincent, in J. Sm. Herb., *Macrae s.n.*(BM!) and St. Catherine's, Brazil, *Armstrong s.n.* (not found). According to Proctor (1977) the *Macrae* specimen at BM represents an unidentified species of the *A. trapeziforme* group, probably originating from a cultivated plant. It has never been found again in the Lesser Antilles, and should not be considered a member of the local flora. Hoshizaki (1970) also mentioned the need for further study on the correct name for this species. Most likely, *A. cultratum* is endemic to southeastern Brazil and is cultivated in several countries. Because the material collected by Armstrong has not been found, and because the *Macrae* specimen is an undesirable lectotype for this taxon, the identity of *A. cultratum* remains somewhat uncertain. There is no recent collection of this species in Brazil.

KEY TO THE SPECIES OF *ADIANTUM TRAPEZIFORME* GROUP IN BRAZIL ALLIED  
TO *A. PULCHERRIMUM*

- 1. Color of the stalks ending abruptly at segment bases
  - 2. Laminae membranaceous to chartaceous; terminal segment of a penultimate division angulate-obovate; indusia oblong . . . . . *A. trapeziforme*
  - 2. Laminae chartaceous rigid to subcoriaceous; terminal segment of a penultimate division asymetrically rhombic; indusia oblong to semilunate . . . . . *A. mathewsianum*
- 1. Color of the stalks passing into segment bases
  - 3. Stipes glabrous along median and distal portions
    - 4. Median segments mostly deltate to trapeziform with acute to long-acuminate apices . . . . . *A. pentadactylon*
    - 4. Median segments quadrangulate to trapeziform with rounded to obtuse apices
      - 5. Both surfaces of the segments glabrous; laminae rigidly chartaceous to subcoriaceous . . . . . *A. ornithopodum*
      - 5. Both surfaces of the segments with minute hairs; laminae chartaceous . . . . *A. patens*
  - 3. Stipes pubescent along median and distal portions, indument of scales and/or hairs
    - 6. Stipes with scattered minute hairs (0.1–0.2 mm long); median segments of penultimate divisions trapeziform with mostly long-acuminate or acute apices . . . . *A. pulcherrimum*
    - 6. Stipes with scales and hairs (hairs c. 1 mm long); median segments of penultimate divisions narrow with long-acuminate apices or quadrangulate to trapeziform with rounded to obtuse apices
      - 7. Median segments ca. 2–3 times longer than wide; indusia glabrous . . . . *A. abscissum*
      - 7. Median segments ca. 4–5 times longer than wide; indusia with light brown hairs . . . . . *A. curvatum*

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